Gastroenterology

Official Journal of the American Gastroenterological Association

Volume 118
January–June 2000

Editor
Daniel K. Podolsky
Massachusetts General Hospital
Boston, Massachusetts

Senior Associate Editor
J. Thomas LaMont
Beth Israel Deaconess Medical Center
Boston, Massachusetts

Editorial Staff
Deborah Zimmer, *Managing Editor*
Maria Battiste, *Manuscript Coordinator*
Sherry Cotaco, *Manuscript Coordinator*
Nikoleta Dineen, *Manuscript Coordinator*
Gilbert Ebner, *Manuscript Coordinator*
Elizabeth November, *Manuscript Coordinator*

Associate Editors

Richard S. Blumberg
Brigham & Women's Hospital
Boston, Massachusetts

Michael Camilleri
Mayo Clinic
Rochester, Minnesota

Jules L. Dienstag
Massachusetts General Hospital
Boston, Massachusetts

Fred S. Gorelick
West Haven VA Medical Center
West Haven, Connecticut

Neil Kaplowitz
USC School of Medicine
Los Angeles, California

T. Jake Liang
National Institutes of Health
Bethesda, Maryland

Jeffrey B. Matthews
Beth Israel Deaconess Medical Center
Boston, Massachusetts

Ann Ouyang
Penn State College of Medicine
Hershey, Pennsylvania

Anil K. Rustgi
University of Pennsylvania School of Medicine
Philadelphia, Pennsylvania

Guido N. J. Tytgat
Academic Medical Center
Amsterdam, The Netherlands

Timothy C. Wang
Massachusetts General Hospital
Boston, Massachusetts

Associate Editor for Nutrition
Samuel Klein
Washington University School of Medicine
St. Louis, Missouri

Consulting Biostatisticians
Endel John Orav
Boston, Massachusetts

YuChiao Chang
Boston, Massachusetts

Special Section Editors

This Month in GASTROENTEROLOGY — Thomas A. Brasitus, Chicago, Illinois

Gastroenterology News — John H. Walsh, Los Angeles, California

Image of the Month — Sanjiv Chopra, Boston, Massachusetts

Selected Summaries — Henry J. Binder, New Haven, Connecticut

Print and Media Reviews — Lawrence S. Friedman, Boston, Massachusetts

Editorial Board

Nezham Afdhal, Boston, Massachusetts
Guido Adler, Ulm, Germany
James M. Anderson, New Haven, Connecticut
John Baillie, Durham, North Carolina
Laurence M. Blendis, Tel Aviv, Israel
Robert S. Bresalier, Detroit, Michigan
Alan Charney, New York, New York
Ray E. Clouse, St. Louis, Missouri
Fabio Cominelli, Charlottesville, Virginia
Nicholas Davidson, St. Louis, Missouri
Joanne Donovan, Boston, Massachusetts
Douglas A. Drossman, Chapel Hill, North Carolina
J. Greg Fitz, Denver, Colorado
Eileen Friedman, Syracuse, New York
Richard Grand, Boston, Massachusetts
Jay H. Hoofnagle, Bethesda, Maryland
Stephen P. James, Baltimore, Maryland
Peter J. Kahrilas, Chicago, Illinois
Richard A. Kozarek, Seattle, Washington
Ernst J. Kuipers, Amsterdam, The Netherlands
Nicholas F. LaRusso, Rochester, Minnesota
Didier Lebrec, Clichy, France
Adrian Lee, Sydney, Australia
Daniel Louvard, Paris, France
James L. Madara, Atlanta, Georgia
Gabriel Makhlouf, Richmond, Virginia
Emeran A. Mayer, Los Angeles, California
Juanita Merchant, Ann Arbor, Michigan
Kunio Okuda, Chiba, Japan
Chung Owyang, Ann Arbor, Michigan
Henry P. Parkman, Philadelphia, Pennsylvania
Charalabos Pothoulakis, Boston, Massachusetts
Lawrie W. Powell, Brisbane, Australia
Eamonn M. Quigley, Omaha, Nebraska
Linda Rabeneck, Houston, Texas
Daniel Rachmilewitz, Jerusalem, Israel
Robert Riddell, Hamilton, Ontario, Canada
Nobuhiro Sato, Tokyo, Japan
Jürgen Schölmerich, Regensburg, Germany
Lloyd R. Sutherland, Calgary, Alberta, Canada
Yvette Tache, Los Angeles, California
Peter G. Traber, Philadelphia, Pennsylvania
Jon A. Vanderhoof, Omaha, Nebraska
John L. Wallace, Calgary, Alberta, Canada

Officers of the American Gastroenterological Association

President — Ralph A. Giannella, Cincinnati, Ohio

President-Elect — Thomas A. Brasitus, Chicago, Illinois

Vice President — Jon I. Isenberg, San Diego, California

Secretary — Joanne A. P. Wilson, Durham, North Carolina

Treasurer — Mark S. McPhee, Kansas City, Missouri

Published by W. B. Saunders Company, The Curtis Center, Independence Square West, Philadelphia, Pennsylvania 19106-3399

GASTAB (2000) ISSN 0016-5085. © 2000 by the American Gastroenterological Association. Issued monthly (semimonthly in April) in two indexed volumes per year by W. B. Saunders Company. Corporate and editorial offices: The Curtis Center, Independence Square West, Philadelphia, Pennsylvania 19106-3399. Accounting and circulation offices: 6277 Sea Harbor Drive, Orlando, Florida 32887-4800.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients, for those registered with the Copyright Clearance Center, Inc. (222 Rosewood Drive, Danvers, MA 01923; (978) 750-8400; www.copyright.com). This consent is given on the condition that the copier pay the stated per-copy fee for that article through the Copyright Clearance Center, Inc. for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Absence of the code indicates that the material may not be processed through the Copyright Clearance Center, Inc.

Gastroenterology

VOLUME 118

NO. 1
JANUARY 2000

1 **This Month in GASTROENTEROLOGY**
T. A. Brasitus

3 **Gastroenterology News**

5 **Comment From the Editors**
D. K. Podolsky

6 **Image of the Month**

ALIMENTARY TRACT

7 **Control of Transient Lower Esophageal Sphincter Relaxations and Reflux by the $GABA_B$ Agonist Baclofen in Normal Subjects**
I. Lidums, A. Lehmann, H. Checklin, J. Dent, and R. H. Holloway

14 **Decreased Interstitial Cell of Cajal Volume in Patients With Slow-Transit Constipation**
C.-L. He, L. Burgart, L. Wang, J. Pemberton, T. Young-Fadok, J. Szurszewski, and G. Farrugia

▶ 22 **Increased Prevalence of Precancerous Changes in Relatives of Gastric Cancer Patients: Critical Role of *H. pylori***
E. M. El-Omar, K. Oien, L. S. Murray, A. El-Nujumi, A. Wirz, D. Gillen, C. Williams, G. Fullarton, and K. E. L. McColl
Editorial, page 222

▶ 31 ***Helicobacter pylori* Infection Among Offspring of Patients With Stomach Cancer**
H. Brenner, G. Bode, and H. Boeing
Editorial, page 222

36 **Synergistic Interaction Between Hypergastrinemia and *Helicobacter* Infection in a Mouse Model of Gastric Cancer**
T. C. Wang, C. A. Dangler, D. Chen, J. R. Goldenring, T. Koh, R. Raychowdhury, R. J. Coffey, S. Ito, A. Varro, G. J. Dockray, and J. G. Fox

48 ***Helicobacter pylori* Alters Gastric Epithelial Cell Cycle Events and Gastrin Secretion in Mongolian Gerbils**
R. M. Peek, Jr., H.-P. Wirth, S. F. Moss, M. Yang, A. M. Abdalla, K. T. Tham, T. Zhang, L. H. Tang, I. M. Modlin, and M. J. Blaser

60 **Overexpression of Intestinal Trefoil Factor in Human Colon Carcinoma Cells Reduces Cellular Growth In Vitro and In Vivo**
H. Uchino, H. Kataoka, H. Itoh, R. Hamasuna, and M. Koono

70 **pS2/TFF1 Interacts Directly With the VWFC Cysteine-Rich Domains of Mucins**
C. Tomasetto, R. Masson, J.-L. Linares, C. Wendling, O. Lefebvre, M.-P. Chenard, and M.-C. Rio

81 **Pyrrolidinedithiocarbamate Increases the Therapeutic Index of 5-Fluorouracil in a Mouse Model**
S. P. Bach, R. Chinery, S. T. O'Dwyer, C. S. Potten, R. J. Coffey, and A. J. M. Watson

90 **Glutamine Metabolism Stimulates Intestinal Cell MAPKs by a cAMP-Inhibitable, Raf-Independent Mechanism**
J. M. Rhoads, R. A. Argenzio, W. Chen, L. M. Graves, L. L. Licato, A. T. Blikslager, J. Smith, J. Gatzy, and D. A. Brenner

101 **HCO_3^- Secretion in the Rat Colonic Crypt Is Closely Linked to Cl^- Secretion**
J. P. Geibel, S. Singh, V. M. Rajendran, and H. J. Binder

108 **Differential Role of Cyclic GMP–Dependent Protein Kinase II in Ion Transport in Murine Small Intestine and Colon**
A. B. Vaandrager, A. G. M. Bot, P. Ruth, A. Pfeifer, F. Hofmann, and H. R. de Jonge

115 **The Homeodomain Protein Cdx2 Regulates Lactase Gene Promoter Activity During Enterocyte Differentiation**
R. Fang, N. A. Santiago, L. C. Olds, and E. Sibley

128 **Modulation of Antigen Trafficking to MHC Class II–Positive Late Endosomes of Enterocytes**
K.-P. Zimmer, J. Büning, P. Weber, D. Kaiserlian, and S. Strobel

LIVER, PANCREAS, AND BILIARY TRACT

138 **Determinants of Mortality in Patients With Advanced Cirrhosis After Transjugular Intrahepatic Portosystemic Shunting**
N. Chalasani, W. S. Clark, L. G. Martin, J. Kamean, M. A. Khan, N. H. Patel, and T. D. Boyer

145 **Vitamin D–Receptor Genotypes as Independent Genetic Predictors of Decreased Bone Mineral Density in Primary Biliary Cirrhosis**
J. E. Springer, D. E. C. Cole, L. A. Rubin, K. Cauch-Dudek, L. Harewood, J. Evrovski, V. D. Peltekova, and E. J. Heathcote

152 **Cell Cycle Regulation of Hepatitis C Virus Internal Ribosomal Entry Site–Directed Translation**
M. Honda, S. Kaneko, E. Matsushita, K. Kobayashi, G. A. Abell, and S. M. Lemon

163 **Expression of the Bile Salt Export Pump Is Maintained After Chronic Cholestasis in the Rat**
J. M. Lee, M. Trauner, C. J. Soroka, B. Stieger, P. J. Meier, and J. L. Boyer

	▶ 173	**Postprandial Chylomicron Formation and Fat Absorption in Multidrug Resistance Gene 2 P-Glycoprotein–Deficient Mice** *P. J. Voshol, D. M. Minich, R. Havinga, R. P. J. Oude Elferink, H. J. Verkade, A. K. Groen, and F. Kuipers* Editorial, page 225
	183	**Platelets Induce Sinusoidal Endothelial Cell Apoptosis Upon Reperfusion of the Cold Ischemic Rat Liver** *D. Sindram, R. J. Porte, M. R. Hoffman, R. C. Bentley, and P.-A. Clavien*
CASE REPORTS	192	**Hepatopulmonary Syndrome in Inferior Vena Cava Obstruction Responding to Cavoplasty** *B. K. De, S. Sen, P. K. Biswas, R. Sanyal, D. Majumdar, and J. Biswas*
AMERICAN GASTROENTEROLOGICAL ASSOCIATION	197	**American Gastroenterological Association Medical Position Statement: Evaluation and Management of Occult and Obscure Gastrointestinal Bleeding**
	201	**AGA Technical Review on the Evaluation and Management of Occult and Obscure Gastrointestinal Bleeding** *G. R. Zuckerman, C. Prakash, M. P. Askin, and B. S. Lewis*
EDITORIALS	222	**When Heredity Is Infectious** *J. Parsonnet*
	225	**Phospholipid Flippase, Low HDL Levels, and Intestinal Fat Absorption: A New Look at the ABCs of Enterohepatic Lipid Flux** *N. O. Davidson*
SELECTED SUMMARIES	228	**PPAR-γ Ligand Antidiabetic Drugs: Good News for Colitis?** *L. J. Egan and W. J. Sandborn*
	230	**Genetic Testing for Hereditary Nonpolyposis Colorectal Cancer: Are We There Yet?** *R. S. Bresalier*
	231	**Intravenous Albumin Reduces Mortality in Patients With Spontaneous Bacterial Peritonitis** *A. Mogyorósi and M. L. Schubert*
PRINT AND MEDIA REVIEWS	234	
CORRESPONDENCE	235	**Treatment of Patients With Dysphagia Caused by Benign Disorders of the Distal Esophagus**
	235	**The "Natural" History of Pain in Chronic Pancreatitis**
	237	**Mesenteric Venous Thrombosis Revealing Both Factor II G20210A Mutation and Hyperhomocysteinemia Related to Pernicious Anemia**
	238	**Omeprazole and Accelerated Onset of Atrophic Gastritis**

242 Lack of Effect of Acid Suppression Therapy on Gastric Atrophy

BIOGRAPHICAL SKETCH 30

NOTICES 244

NO. 2
FEBRUARY 2000

247 This Month in GASTROENTEROLOGY
T. A. Brasitus

249 Gastroenterology News

251 Comment From the Editors
A. K. Rustgi

252 Image of the Month

ALIMENTARY TRACT

253 Effects of Sildenafil on Esophageal Motility of Patients With Idiopathic Achalasia
M. Bortolotti, C. Mari, C. Lopilato, G. Porrazzo, and M. Miglioli

▶ 258 Microprocessor-Controlled Movement of Solid Gastric Content Using Sequential Neural Electrical Stimulation
M. P. Mintchev, C. P. Sanmiguel, M. Amaris, and K. L. Bowes
Editorial, page 433

▶ 264 Prophylaxis of Postoperative Relapse in Crohn's Disease With Mesalamine: European Cooperative Crohn's Disease Study VI
H. Lochs, M. Mayer, W. E. Fleig, P. B. Mortensen, P. Bauer, D. Genser, W. Petritsch, M. Raithel, R. Hoffmann, V. Gross, M. Plauth, M. Staun, L. B. Nesje, and the European Cooperative Crohn's Disease Study VI Group
Editorial, page 436

274 Clinical Phenotype Is Related to HLA Genotype in the Peripheral Arthropathies of Inflammatory Bowel Disease
T. R. Orchard, S. Thiyagaraja, K. I. Welsh, B. P. Wordsworth, J. S. H. Gaston, and D. P. Jewell

279 **High Multidrug Resistance (P-Glycoprotein 170) Expression in Inflammatory Bowel Disease Patients Who Fail Medical Therapy**
R. J. Farrell, A. Murphy, A. Long, S. Donnelly, A. Cherikuri, D. O'Toole, N. Mahmud, P. W. N. Keeling, D. G. Weir, and D. Kelleher

289 **Adhesion Molecules Expressed on Homing Lymphocytes in Model Intestinal Epithelia**
T. Shibahara, M. Si-Tahar, S. K. Shaw, and J. L. Madara

299 **The Effect of Insulin on Human Small Intestinal Mucosal Protein Synthesis**
M. Charlton, B. Ahlman, and K. S. Nair

307 **A Predominant Th1 Type of Immune Response Is Induced Early During Acute *Helicobacter pylori* Infection in Rhesus Macaques**
J. J. Mattapallil, S. Dandekar, D. R. Canfield, and J. V. Solnick

316 **Role of Inducible Nitric Oxide Synthase in Postoperative Intestinal Smooth Muscle Dysfunction in Rodents**
J. C. Kalff, W. H. Schraut, T. R. Billiar, R. L. Simmons, and A. J. Bauer

328 **Distal and Deglutitive Inhibition in the Rat Esophagus: Role of Inhibitory Neurotransmission in the Nucleus Tractus Solitarii**
H. Dong, C. W. Loomis, and D. Bieger

337 **Cyclooxygenase 2 Expression Is Increased in the Stroma of Colon Carcinomas From IL-10$^{-/-}$ Mice**
R. L. Shattuck-Brandt, G. W. Varilek, A. Radhika, F. Yang, M. K. Washington, and R. N. DuBois

LIVER, PANCREAS, AND BILIARY TRACT

346 **Hepatitis C Virus–Specific T-Cell Reactivity During Interferon and Ribavirin Treatment in Chronic Hepatitis C**
M. E. Cramp, S. Rossol, S. Chokshi, P. Carucci, R. Williams, and N. V. Naoumov

356 **Differential Expression of Chemokines in Normal Pancreas and in Chronic Pancreatitis**
L. Saurer, P. Reber, T. Schaffner, M. W. Büchler, C. Buri, A. Kappeler, A. Walz, H. Friess, and C. Mueller

368 **Mechanisms of Attachment and Internalization of *Cryptosporidium parvum* to Biliary and Intestinal Epithelial Cells**
X.-M. Chen and N. F. LaRusso

380 **Genipin, A Metabolite Derived From the Herbal Medicine Inchin-ko-to, and Suppression of Fas-Induced Lethal Liver Apoptosis in Mice**
M. Yamamoto, N. Miura, N. Ohtake, S. Amagaya, A. Ishige, H. Sasaki, Y. Komatsu, K. Fukuda, T. Ito, and K. Terasawa

▶ 390 **Cryopreserved Mouse Hepatocytes Retain Regenerative Capacity In Vivo**
H. Z. Jamal, T. C. Weglarz, and E. P. Sandgren
Editorial, page 438

395 **Functional Interactions Between Oxidative Stress, Membrane Na^+ Permeability, and Cell Volume in Rat Hepatoma Cells**
T. Schlenker, A. P. Feranchak, L. Schwake, W. Stremmel, R. M. Roman, and J. G. Fitz

404 **NO-Aspirin Protects From T Cell–Mediated Liver Injury by Inhibiting Caspase-Dependent Processing of Th1-like Cytokines**
S. Fiorucci, L. Santucci, E. Antonelli, E. Distrutti, G. del Sero, O. Morelli, L. Romani, B. Federici, P. del Soldato, and A. Morelli

422 **Drug- and Estrogen-Induced Cholestasis Through Inhibition of the Hepatocellular Bile Salt Export Pump (Bsep) of Rat Liver**
B. Stieger, K. Fattinger, J. Madon, G. A. Kullak-Ublick, and P. J. Meier

CASE REPORTS

431 **Florid Opioid Withdrawal–like Reaction Precipitated by Naltrexone in a Patient With Chronic Cholestasis**
E. A. Jones and L. R. C. Dekker

EDITORIALS

433 **The Brute Force Approach to Electrical Stimulation of Gastric Emptying: A Future Treatment for Refractory Gastroparesis?**
W. L. Hasler

436 **Mesalamine for the Prevention of Postoperative Recurrence: Is Nearly There the Same as Being There?**
L. R. Sutherland

438 **Alternatives to Liver Transplantation: From Hepatocyte Transplantation to Tissue-Engineered Organs**
C. A. Sundback and J. P. Vacanti

SELECTED SUMMARIES

443 **Neostigmine for Acute Colonic Pseudo-obstruction: New Use for an Old Drug?**
W. L. Hasler

444 **How do Intestinal T Cells Sense the Dietary and Microbial Environment?**
F. Shanahan and G. C. O'Sullivan

446 **Interferon Therapy Prevents Hepatocellular Carcinoma in Some Patients With Chronic HCV: The Role of Fibrosis**
L. Blendis, F. Wong, and M. Sherman

PRINT AND MEDIA REVIEWS

449

CORRESPONDENCE

450 **Sensitivity of Cold-Preserved Rat Liver to Single-Pass Reperfusion**

451 *H. pylori* and Risk of Ulcer Bleeding Among Users of NSAIDs

452 Enterokinase in Cerulein Pancreatitis

453 Lack of Effect of Acid Suppression Therapy on Gastric Atrophy

453 Correction

BIOGRAPHICAL SKETCH 379

NOTICES 454

NO. 3
MARCH 2000

457 This Month in GASTROENTEROLOGY
T. A. Brasitus

459 Gastroenterology News

461 Comment From the Editors
J. B. Matthews

462 Image of the Month

ALIMENTARY TRACT

463 Tegaserod Accelerates Orocecal Transit in Patients With Constipation-Predominant Irritable Bowel Syndrome
C. M. Prather, M. Camilleri, A. R. Zinsmeister, S. McKinzie, and G. Thomforde

469 Topographic Analysis of Esophageal Double-Peaked Waves
R. E. Clouse, A. Staiano, and A. Alrakawi

477 Heme Oxygenase Activity in the Internal Anal Sphincter: Effects of Nonadrenergic, Noncholinergic Nerve Stimulation
S. Chakder, G.-Y. Cao, R. B. Lynn, and S. Rattan

487 Cyclooxygenase 2 Expression in Barrett's Esophagus and Adenocarcinoma: Ex Vivo Induction by Bile Salts and Acid Exposure
V. N. Shirvani, R. Ouatu-Lascar, B. S. Kaur, M. B. Omary, and G. Triadafilopoulos

497 **Integrin α6β4 as a Suppressor and a Predictive Marker for Peritoneal Dissemination in Human Gastric Cancer**
Y. Ishii, A. Ochiai, T. Yamada, S. Akimoto, K. Yanagihara, M. Kitajima, and S. Hirohashi

507 **Overexpression of Protein Kinase C-β1 Isoenzyme Suppresses Indomethacin-Induced Apoptosis in Gastric Epithelial Cells**
G. H. Zhu, B. C. Y. Wong, E. D. Slosberg, M. C. Eggo, C. K. Ching, S. T. Yuen, K. C. Lai, J. W. Soh, I. B. Weinstein, and S. K. Lam

515 **IL-1β–Induced Apoptosis in Rat Gastric Enterochromaffin-like Cells Is Mediated by iNOS, NF-κB, and Bax Protein**
S. Mahr, N. Neumayer, M. Gerhard, M. Classen, and C. Prinz

525 **Rapid Activation of NF-κB and AP-1 and Target Gene Expression in Postischemic Rat Intestine**
K.-Y. Yeh, M. Yeh, J. Glass, and D. N. Granger

535 **Polarized Transport of Hydrophilic Compounds Across Rat Colonic Mucosa From Serosa to Mucosa Is Temperature Dependent**
M. Tomita, M. J. Menconi, R. L. Delude, and M. P. Fink

▶ 544 **The Role of Medial Hypothalamic Serotonin in the Suppression of Feeding in a Rat Model of Colitis**
A. Ballinger, T. El-Haj, D. Perrett, J. Turvill, O. Obeid, S. Dryden, G. Williams, and M. J. G. Farthing
Editorial, page 625

LIVER, PANCREAS, AND BILIARY TRACT

554 **Hepatitis B Genotypes Correlate With Clinical Outcomes in Patients With Chronic Hepatitis B**
J.-H. Kao, P.-J. Chen, M.-Y. Lai, and D.-S. Chen

560 **Oral Contraceptive Use and Focal Nodular Hyperplasia of the Liver**
D. Mathieu, H. Kobeiter, P. Maison, A. Rahmouni, D. Cherqui, E. S. Zafrani, and D. Dhumeaux

565 **Role of Angiotensin II in Regulation of Basal and Sympathetically Stimulated Vascular Tone in Early and Advanced Cirrhosis**
A. Helmy, R. Jalan, D. E. Newby, P. C. Hayes, and D. J. Webb

▶ 573 **Autoimmune-Related Pancreatitis Is Associated With Autoantibodies and a Th1/Th2-type Cellular Immune Response**
K. Okazaki, K. Uchida, M. Ohana, H. Nakase, S. Uose, M. Inai, Y. Matsushima, K. Katamura, K. Ohmori, and T. Chiba
Editorial, page 626

▶ 582 **CD4+ T Cells Play an Important Role in Acute Experimental Pancreatitis in Mice**
A. Demols, O. Le Moine, F. Desalle, E. Quertinmont, J.-L. Van Laethem, and J. Devière
Editorial, page 626

591 **Synergistic Growth Factors Enhance Rat Liver Proliferation and Enable Retroviral Gene Transfer Via a Peripheral Vein**
S. J. Forbes, M. Themis, M. R. Alison, I. Sarosi, C. Coutelle, and H. J. F. Hodgson

599 **Regulation of Sterol 12α-Hydroxylase and Cholic Acid Biosynthesis in the Rat**
Z. R. Vlahcevic, G. Eggertsen, I. Björkhem, P. B. Hylemon, K. Redford, and W. M. Pandak

608 **Superoxide Enhances Interleukin 1β–Mediated Transcription of the Hepatocyte-Inducible Nitric Oxide Synthase Gene**
P. C. Kuo, K. Abe, and R. A. Schroeder

SPECIAL REPORTS AND REVIEWS

619 **Patterns of Endoscopy Use in the United States**
D. A. Lieberman, P. L. de Garmo, D. E. Fleischer, G. M. Eisen, and M. Helfand

EDITORIALS

625 **Experimental Colitis and Reduction of Food Intake: What Are the Mechanisms?**
Y. Taché

626 **The Role of Immunocytes in Acute and Chronic Pancreatitis: When Friends Turn Into Enemies**
H. G. Beger, F. Gansauge, and J. M. Mayer

SELECTED SUMMARIES

630 **Probiotic Therapy With *E. coli* for Ulcerative Colitis: Take the Good With the Bad**
W. A. Faubion and W. J. Sandborn

632 **Another Link in the Iron Chain?**
K. V. Kowdley

633 **Growing Pains**
R. L. Koretz

PRINT AND MEDIA REVIEWS

636

CORRESPONDENCE

637 **Colon Polyps in Beckwith–Wiedemann Syndrome: Role of Imprinted Genes**

637 **Aortic Thrombosis With Splenic and Renal Embolization**

638 **Rofecoxib Versus Placebo Ulcer Rates**

639 **The Clinical Role of COX-2 Inhibitors**

640 COX-2 Selectivity and Lack of Gastrointestinal Toxicity: True, True and Unrelated?

641 Development of a Tensostat for Gastric Perception Studies

BIOGRAPHICAL SKETCH 486

NOTICES 644

NO. 4
APRIL 2000

649 This Month in GASTROENTEROLOGY
T. A. Brasitus

651 Gastroenterology News

653 Comment From the Editors
M. Camilleri

654 Image of the Month

RAPID COMMUNICATIONS

655 Interleukin 10 Treatment Reduces Fibrosis in Patients With Chronic Hepatitis C: A Pilot Trial of Interferon Nonresponders
D. R. Nelson, G. Y. Lauwers, J. Y. N. Lau, and G. L. Davis

ALIMENTARY TRACT

▶ 661 Long-term Omeprazole Treatment in Resistant Gastroesophageal Reflux Disease: Efficacy, Safety, and Influence on Gastric Mucosa
E. C. Klinkenberg-Knol, F. Nelis, J. Dent, P. Snel, B. Mitchell, P. Prichard, D. Lloyd, N. Havu, M. H. Frame, J. Romàn, A. Walan, and Long-term Study Group
Editorial, page 795

670 Endoscopic Mucosal Resection of Early Cancer and High-Grade Dysplasia in Barrett's Esophagus
C. Ell, A. May, L. Gossner, O. Pech, E. Günter, G. Mayer, R. Henrich, M. Vieth, H. Müller, G. Seitz, and M. Stolte

678 **Development and Validation of a Self-report Symptom Inventory to Assess the Severity of Oral-Pharyngeal Dysphagia**
K. L. Wallace, S. Middleton, and I. J. Cook

688 **Increased Frequency of Transient Lower Esophageal Sphincter Relaxation Induced by Gastric Distention in Reflux Patients With Hiatal Hernia**
P. J. Kahrilas, G. Shi, M. Manka, and R. J. Joehl

696 **Intravenous Pantoprazole Rapidly Controls Gastric Acid Hypersecretion in Patients With Zollinger–Ellison Syndrome**
E. A. Lew, J. R. Pisegna, J. A. Starr, E. F. Soffer, C. Forsmark, I. M. Modlin, J. H. Walsh, M. Beg, W. Bochenek, and D. C. Metz

705 **Pharmacogenomics and Metabolite Measurement for 6-Mercaptopurine Therapy in Inflammatory Bowel Disease**
M. C. Dubinsky, S. Lamothe, H. Y. Yang, S. R. Targan, D. Sinnett, Y. Théorêt, and E. G. Seidman

714 **Impaired Nitrergic Innervation in Rat Colitis Induced by Dextran Sulfate Sodium**
Y. Mizuta, H. Isomoto, and T. Takahashi

▶ 724 **The Luminal Short-Chain Fatty Acid Butyrate Modulates NF-κB Activity in a Human Colonic Epithelial Cell Line**
M. S. Inan, R. J. Rasoulpour, L. Yin, A. K. Hubbard, D. W. Rosenberg, and C. Giardina
Editorial, page 798

735 **Molecular Mechanism of Interferon Alfa–Mediated Growth Inhibition in Human Neuroendocrine Tumor Cells**
K. M. Detjen, M. Welzel, K. Farwig, F. H. Brembeck, A. Kaiser, E.-O. Riecken, B. Wiedenmann, and S. Rosewicz

749 **Induction and Maintenance of Immune Effector Cells in the Gastric Tissue of Mice Orally Immunized to *Helicobacter pylori* Requires Salivary Glands**
Y. Shirai, Y. Wakatsuki, T. Kusumoto, M. Nakata, M. Yoshida, T. Usui, T. Iizuka, and T. Kita

LIVER, PANCREAS, AND BILIARY TRACT

760 **Natural History of Hepatitis C Virus Carriers With Persistently Normal Aminotransferase Levels**
M. Persico, E. Persico, R. Suozzo, S. Conte, M. de Seta, L. Coppola, B. Palmentieri, F. C. Sasso, and R. Torella

765 **Selective Alteration of Agonist-Mediated Contraction in Hepatic Arteries Isolated From Patients With Cirrhosis**
M. Z. Islam, B. C. Williams, K. K. Madhavan, P. C. Hayes, and P. W. F. Hadoke

772 **Impaired Biliary Cholesterol Secretion and Decreased Gallstone Formation in Apolipoprotein E–Deficient Mice Fed a High-Cholesterol Diet**
L. Amigo, V. Quiñones, P. Mardones, S. Zanlungo, J. F. Miquel, F. Nervi, and A. Rigotti

780 **Does Alcohol Directly Stimulate Pancreatic Fibrogenesis? Studies With Rat Pancreatic Stellate Cells**
M. V. Apte, P. A. Phillips, R. G. Fahmy, S. J. Darby, S. C. Rodgers, G. W. McCaughan, M. A. Korsten, R. C. Pirola, D. Naidoo, and J. S. Wilson

EDITORIALS

795 **The Efficacy and Safety of Long-term Omeprazole Treatment for Gastroesophageal Reflux Disease**
E. J. Kuipers and S. G. M. Meuwissen

798 **Maintaining Gut Homeostasis: The Butyrate–NF-κB Connection**
R. Hodin

SELECTED SUMMARIES

802 **An Advance in the Treatment of Portal Hypertension?**
F. Wong and L. Blendis

803 ***Salmonella* Pathogenesis: The Trojan Horse or the New York Shuttle?**
W. I. Lencer and M. R. Neutra

PRINT AND MEDIA REVIEWS 806

CORRESPONDENCE

807 **Which Is the Hen and Which Is the Egg?**

807 **Brain-Gut Interactions in Ulcerative Colitis**

808 **When Should Endoscopic Screening in Familial Adenomatous Polyposis Be Started?**

BIOGRAPHICAL SKETCH 771

NOTICES 810

NO. 5
MAY 2000

815 **This Month in GASTROENTEROLOGY**
T. A. Brasitus

817 **Gastroenterology News**

819 **Comment From the Editors**
T. C. Wang

820 **Image of the Month**

ALIMENTARY TRACT

821 ***Helicobacter heilmannii*–Associated Primary Gastric Low-Grade MALT Lymphoma: Complete Remission After Curing the Infection**
A. Morgner, N. Lehn, L. P. Andersen, C. Thiede, M. Bennedsen, K. Trebesius, B. Neubauer, A. Neubauer, M. Stolte, and E. Bayerdörffer

▶ 829 **Controlled 15-Year Trial on Screening for Colorectal Cancer in Families With Hereditary Nonpolyposis Colorectal Cancer**
H. J. Järvinen, M. Aarnio, H. Mustonen, K. Aktan-Collan, L. A. Aaltonen, P. Peltomäki, A. de la Chapelle, and J.-P. Mecklin
Editorial, page 969

835 **Microsatellite Instability and Mutation of Mitochondrial and Nuclear DNA in Gastric Carcinoma**
W. Habano, T. Sugai, S. Nakamura, N. Uesugi, T. Yoshida, and S. Sasou

▶ 842 **Regional Cerebral Activation in Irritable Bowel Syndrome and Control Subjects With Painful and Nonpainful Rectal Distention**
H. Mertz, V. Morgan, G. Tanner, D. Pickens, R. Price, Y. Shyr, and R. Kessler
Editorial, page 972

849 **Distinct Expression of Splice Variants of Neuronal Nitric Oxide Synthase in the Human Gastrointestinal Tract**
D. Saur, H. Paehge, V. Schusdziarra, and H.-D. Allescher

859 **Expression of Glucocorticoid Receptor β in Lymphocytes of Patients With Glucocorticoid-Resistant Ulcerative Colitis**
M. Honda, F. Orii, T. Ayabe, S. Imai, T. Ashida, T. Obara, and Y. Kohgo

867 **Selective Expansion of Intraepithelial Lymphocytes Expressing the HLA-E–Specific Natural Killer Receptor CD94 in Celiac Disease**
B. Jabri, N. Patey-Mariaud de Serre, C. Cellier, K. Evans, C. Gache, C. Carvalho, J.-F. Mougenot, M. Allez, R. Jian, P. Desreumaux, J.-F. Colombel, C. Matuchansky, H. Cugnenc, M. Lopez-Botet, E. Vivier, A. Moretta, A. I. Roberts, E. C. Ebert, D. Guy-Grand, N. Brousse, J. Schmitz, and N. Cerf-Bensussan

▶ 880 **Intestinal Inflammation Observed in IL-2R/IL-2 Mutant Mice Is Associated With Impaired Intestinal T Lymphopoiesis**
P. Poussier, T. Ning, J. Chen, D. Banerjee, and M. Julius
Editorial, page 974

892 **Propagation and Neural Regulation of Calcium Waves in Longitudinal and Circular Muscle Layers of Guinea Pig Small Intestine**
R. J. Stevens, N. G. Publicover, and T. K. Smith

LIVER, PANCREAS, AND BILIARY TRACT

905 **Gastric Mucosal Responses to Intrahepatic Portosystemic Shunting in Patients With Cirrhosis**
P. S. Kamath, M. Lacerda, D. A. Ahlquist, M. A. McKusick, J. C. Andrews, and D. A. Nagorney

912 **Impaired Human Gallbladder Lipid Absorption in Cholesterol Gallstone Disease and Its Effect on Cholesterol Solubility in Bile**
S. Ginanni Corradini, W. Elisei, L. Giovannelli, C. Ripani, P. Della Guardia, A. Corsi, A. Cantafora, L. Capocaccia, V. Ziparo, V. Stipa, P. Chirletti, R. Caronna, D. Lomanto, and A. F. Attili

921 **Role of ATP7B in Biliary Copper Excretion in a Human Hepatoma Cell Line and Normal Rat Hepatocytes**
M. Harada, S. Sakisaka, K. Terada, R. Kimura, T. Kawaguchi, H. Koga, E. Taniguchi, K. Sasatomi, N. Miura, T. Suganuma, H. Fujita, K. Furuta, K. Tanikawa, T. Sugiyama, and M. Sata

929 **Glucagon-Induced Expression of the MAP Kinase Phosphatase MKP-1 in Rat Hepatocytes**
F. Schliess, A. K. Kurz, and D. Häussinger

937 **Contribution of Nitric Oxide to the Pathogenesis of Cirrhotic Cardiomyopathy in Bile Duct–Ligated Rats**
H. Liu, Z. Ma, and S. S. Lee

AMERICAN GASTROENTEROLOGICAL ASSOCIATION

945 **Our New President—Thomas A. Brasitus, M.D.**
N. O. Davidson

951 **American Gastroenterological Association Medical Position Statement: Guidelines on Intestinal Ischemia**

954 **AGA Technical Review on Intestinal Ischemia**
L. J. Brandt and S. J. Boley

EDITORIALS	969	**If Aggressive Surveillance in Hereditary Nonpolyposis Colorectal Cancer Is Now State of the Art, Are There Any Challenges Left?** *P. Lynch*
	972	**Rectal Distention: From Sensation to Feeling** *N. W. Read*
	974	**Do Mucosal T Cells Prevent Intestinal Inflammation?** *M. Kronenberg and H. Cheroutre*
SELECTED SUMMARIES	978	**Urgent Endoscopy With Endoscopic Therapy for Acute Diverticular Bleeding** *J. D. Lewis*
	980	**Diagnostic Testing After Fecal Occult Blood Testing: Compliance Is the Issue** *R. S. Bresalier*
	981	**NASH: Can We Iron Out the Pathogenesis?** *L. Blendis, R. Oren, and Z. Halpern*
PRINT AND MEDIA REVIEWS	984	
CORRESPONDENCE	986	**Insulin Resistance Influences Iron Metabolism and Hepatic Steatosis in Type II Diabetes**
	987	**Short-Segment Barrett's: A Significant Lesion**
	988	**A "G Insertion" at Nucleic Acids 481 of the *H. pylori fldA* Gene Is Not Associated With Gastric MALT Lymphoma**
BIOGRAPHICAL SKETCH	828	
NOTICES	990	

NO. 6
JUNE 2000

	995	**This Month in GASTROENTEROLOGY** *T. A. Brasitus*
	997	**Gastroenterology News**

999 **Comment From the Editors**
L. S. Friedman and D. K. Podolsky

1000 **Image of the Month**

RAPID COMMUNICATIONS

1001 **Claudins Regulate the Intestinal Barrier in Response to Immune Mediators**
T. Kinugasa, T. Sakaguchi, X. Gu, and H.-C. Reinecker

1012 **Par-4, a Proapoptotic Gene, Is Regulated by NSAIDs in Human Colon Carcinoma Cells**
Z. Zhang and R. N. DuBois

ALIMENTARY TRACT

1018 **Azathioprine for Maintenance of Remission in Crohn's Disease: Benefits Outweigh the Risk of Lymphoma**
J. D. Lewis, J. S. Schwartz, and G. R. Lichtenstein

1025 **Genotypic Analysis of Thiopurine *S*-Methyltransferase in Patients With Crohn's Disease and Severe Myelosuppression During Azathioprine Therapy**
J.-F. Colombel, N. Ferrari, H. Debuysere, P. Marteau, J.-P. Gendre, B. Bonaz, J.-C. Soulé, R. Modigliani, Groupe d'Etudes Thérapeutique des Affections Inflammataires Digestives (GETAID), Y. Touze, P. Catala, C. Libersa, and F. Broly

1031 **Epstein–Barr Virus—Associated Gastric Carcinomas: Relation to *H. pylori* Infection and Genetic Alterations**
M.-S. Wu, C.-T. Shun, C.-C. Wu, T.-Y. Hsu, M.-T. Lin, M.-C. Chang, H.-P. Wang, and J.-T. Lin

1039 **Alterations in Exon 4 of the *p53* Gene in Gastric Carcinoma**
T. Shepherd, D. Tolbert, J. Benedetti, J. Macdonald, G. Stemmermann, J. Wiest, G. DeVoe, M. A. Miller, J. Wang, A. Noffsinger, and C. Fenoglio-Preiser

1045 **Activation of c-K-*ras* Mutations in Human Gastrointestinal Tumors**
N. Arber, I. Shapira, J. Ratan, B. Stern, H. Hibshoosh, M. Moshkowitz, M. Gammon, I. Fabian, and Z. Halpern

▶ 1051 **Identification of Transport Abnormalities in Duodenal Mucosa and Duodenal Enterocytes From Patients With Cystic Fibrosis**
V. S. Pratha, D. L. Hogan, B. A. Martensson, J. Bernard, R. Zhou, and J. I. Isenberg
Editorial, page 1258

1061 **Constitutive and Regulated Secretion of Secretory Leukocyte Proteinase Inhibitor by Human Intestinal Epithelial Cells**
M. Si-Tahar, D. Merlin, S. Sitaraman, and J. L. Madara

1072 **Inhibition of Gastric Mucin Synthesis by *Helicobacter pylori***
J. C. Byrd, C. K. Yunker, Q.-S. Xu, L. R. Sternberg, and R. S. Bresalier

1080 **Reversible Drug-Induced Oxyntic Atrophy in Rats**
J. R. Goldenring, G. S. Ray, R. J. Coffey, Jr., P. C. Meunier, P. J. Haley, T. B. Barnes, and B. D. Car

1094 **Antibiotic Therapy Attenuates Colitis in Interleukin 10 Gene–Deficient Mice**
K. L. Madsen, J. S. Doyle, M. M. Tavernini, L. D. Jewell, R. P. Rennie, and R. N. Fedorak

1106 **Lipopolysaccharide Is Radioprotective in the Mouse Intestine Through a Prostaglandin-Mediated Mechanism**
T. Riehl, S. Cohn, T. Tessner, S. Schloemann, and W. F. Stenson

LIVER, PANCREAS, AND BILIARY TRACT

1117 **Liver Fibrosis in Overweight Patients**
V. Ratziu, P. Giral, F. Charlotte, E. Bruckert, V. Thibault, I. Theodorou, L. Khalil, G. Turpin, P. Opolon, and T. Poynard

1124 **The MHC Is a Major Determinant of Viral Status, but Not Fibrotic Stage, in Individuals Infected With Hepatitis C**
S. M. McKiernan, R. Hagan, M. Curry, G. S. A. McDonald, N. Nolan, J. Crowley, J. Hegarty, E. Lawlor, and D. Kelleher

1131 **Splanchnic and Leg Exchange of Amino Acids and Ammonia in Acute Liver Failure**
J. O. Clemmesen, J. Kondrup, and P. Ott

1140 **Enhanced Urinary Excretion of Cysteinyl Leukotrienes in Patients With Acute Alcohol Intoxication**
M. Uemura, W.-D. Lehmann, W. Schneider, H. K. Seitz, A. Benner, A. Keppler-Hafkemeyer, P. Hafkemeyer, H. Kojima, M. Fujimoto, T. Tsujii, H. Fukui, and D. Keppler

▶ 1149 **Angiotensin II Induces Contraction and Proliferation of Human Hepatic Stellate Cells**
R. Bataller, P. Ginès, J. M. Nicolás, M. N. Görbig, E. Garcia-Ramallo, X. Gasull, J. Bosch, V. Arroyo, and J. Rodés
Editorial, page 1261

1157 **Bile Duct Ligation in Rats Induces Biliary Expression of Cytokine-Induced Neutrophil Chemoattractant**
J. M. Saito and J. J. Maher

▶ 1169 **An Oral Endothelin-A Receptor Antagonist Blocks Collagen Synthesis and Deposition in Advanced Rat Liver Fibrosis**
J.-J. Cho, B. Hocher, H. Herbst, J.-D. Jia, M. Ruehl, E. G. Hahn, E. O. Riecken, and D. Schuppan
Editorial, page 1261

▶ 1179 **Role of Biliary Phosphatidylcholine in Bile Acid Protection and NSAID Injury of the Ileal Mucosa in Rats**
J. M. Barrios and L. M. Lichtenberger
Editorial, page 1265

▶ 1187 **Cystic Fibrosis Transmembrane Conductance Regulator Currents in Guinea Pig Pancreatic Duct Cells: Inhibition by Bicarbonate Ions**
C. M. O'Reilly, J. P. Winpenny, B. E. Argent, and M. A. Gray
Editorial, page 1258

1197 **Serotonin Released From Intestinal Enterochromaffin Cells Mediates Luminal Non–Cholecystokinin-Stimulated Pancreatic Secretion in Rats**
Y. Li, Y. Hao, J. Zhu, and C. Owyang

SPECIAL REPORTS AND REVIEWS

1208 **NF-κB/Rel/IκB: Implications in Gastrointestinal Diseases**
R. M. Schmid and G. Adler

AMERICAN GASTROENTEROLOGICAL ASSOCIATION

1229 **Presentation of the Julius M. Friedenwald Medal to Howard M. Spiro, M.D.**

1233 **American Gastroenterological Association Medical Position Statement: Impact of Dietary Fiber on Colon Cancer Occurrence**

1235 **AGA Technical Review: Impact of Dietary Fiber on Colon Cancer Occurrence**
Y.-I. Kim

EDITORIALS

1258 **Bicarbonate Secretion and CFTR: Continuing the Paradigm Shift**
C. D. Ulrich II

1261 **Vasoactive Agents in Intrahepatic Portal Hypertension and Fibrogenesis: Implications for Therapy**
D. C. Rockey

1265 **Significance of Biliary Phospholipids for Maintenance of the Gastrointestinal Mucosal Barrier and Hepatocellular Integrity**
F. Nervi

SELECTED SUMMARIES

1268 **Decisions, Decisions, Decisions**
R. L. Koretz

1270 **Stopping the Unstoppable?**
L. Blendis and F. Wong

1272 **Goblet Cells Make More Than Just Mucus**
G. R. Lichtenstein

PRINT AND MEDIA REVIEWS

1275

CORRESPONDENCE

1277 **Colonoscopic Polypectomy in Chronic Colitis**

1280 **Bifidobacteria in Necrotizing Enterocolitis**

	1281	**Steroids May Prevent Leukopenia, Interfering With Response to IV Azathioprine in Treatment of Crohn's Disease**
	1282	**A Significant Advance in the Understanding of Intestinal Anion Secretion**
BIOGRAPHICAL SKETCH	1050	
NOTICES	1284	
	1289	**Author Index to Volume 118**
	1299	**Subject Index to Volume 118**